CAA 112(r) INSPECTION REPORT

Iowa Premium
3777 L Avenue
Tama, Iowa
County: Tama
641-484-2220
Process: Anhydrous ammonia refrigeration

September 9, 2015
Case No.: 15IA0909
RMP No.: 1000 0000 5843
FRS No.: 1100 0041 4873
High Risk: No
Program Level: 3

SUMMARY OF OBSERVATIONS

A review of Iowa Premium documents and the facility revealed the following preliminary findings:

1. **The facility had not conducted a hazard assessment (Title 40 *Code of Federal Regulations* [CFR] 40 CFR 68.12(d)(2)).**

2. **The facility had not compiled written information regarding electrical classification, relief system design, or ventilation system design (40 CFR 68.12(d)(1)(iii-v).**

3. **The facility had not prepared and implemented written procedures for maintaining process equipment (40 CFR 73(b)).**

4. **The facility had not followed the generally accepted and good engineering practice of prominently identifying the main shut-off valve ("king valve") of the facility's "low side" anhydrous ammonia refrigeration system (40CFR 68.73(e)).** *This preliminary finding was identified during post-inspection review of photographs.*

5. **The facility had not implemented an emergency response program or coordinated to have the facility included in the community emergency response plan (40 CFR 68.12(d)(4)).**

6. **The facility had not submitted a Risk Management Plan (RMP) (40 CFR 68.12(a)).**

INTRODUCTION

I, Robert Monnig, Tetra Tech, Inc. (Tetra Tech), as a representative of the U.S. Environmental Protection Agency (EPA), Region 7, inspected the Iowa Premium facility in Tama, Iowa, on September 9, 2015. On September 4, 2015, I attempted to contact the facility via the phone number listed on the facility's most recently submitted RMP (see Appendix A, Item 1), but I was unable to reach the facility via the number. I found the correct phone number listed on the facility's website (www.iowapremium.com) and when I called, I was directed to Mr. Herman Marks when I asked to speak to the health and safety manager for the facility. I explained to Mr. Marks that I would be conducting an inspection for EPA on September 9, 2015; I explained the scope of the inspection and asked him if he would be my contact person. Mr. Marks told me he would take the information and call me when he knew who would be the facility's contact

person. Mr. Marks called me on September 8, 2015, and told me that he would be the contact person for the inspection. At that time, I arranged with Mr. Marks to begin the inspection at 9:00 a.m. on September 9, 2015, and I emailed Mr. Marks a copy of the Program 3 inspection checklist and details regarding documents I wanted to review during the inspection.

I conducted the inspection to determine if the facility complies with Section 112(r) of the Clean Air Act (CAA), as amended in 1990. The EPA regulation on implementation of this law is specified in 40 CFR Part 68. The Chemical Accident Prevention Provisions (CAPP) at 40 CFR 68 require a facility to: (1) submit a complete RMP to EPA for regulated chemicals the facility processes after June 21, 1999, in amounts above the applicable threshold quantities; and (2) implement the program described in the RMP.

Prior to the inspection, EPA provided me a copy of the facility's most recent RMP submission from 2004 (see Appendix A, Item 1).

Documentation obtained from Iowa Premium has been included in Appendix B.

HISTORY OF BUSINESS

The Iowa Premium facility is in Tama, Iowa, approximately 60 miles northeast of Des Moines, Iowa. The facility is a beef slaughter and packaging facility and occupies a facility that was formerly operated by Iowa Quality Beef. According to Mr. Marks, Iowa Quality Beef had stopped production at the facility approximately 12 years ago, and the facility remained unused until re-opened by Iowa Premium in November 2014. Mr. Marks told me the company initially used the name "Iowa Premium Beef" at the time of the November 2014 opening, but later changed the name to "Iowa Premium." Iowa Premium operates two anhydrous ammonia refrigeration systems at the facility: "high-side" and "low-side" systems with anhydrous ammonia capacities of 32,253.3 and 5,778.84 pounds (lbs), respectively, indicated in facility documentation.

PERSONS INTERVIEWED AND INDIVIDUAL RESPONSIBILITIES

I interviewed the following persons as part of the inspection process:

Mindy Benson ..... Emergency Management & 911 Coordinator, Tama County
Herman Marks ..... HSE Manager, Iowa Premium
Quentin Behounek ..... Operator, Iowa Premium
Sheila Breja ..... Maintenance Clerk, Iowa Premium

INSPECTION

I arrived at the Iowa Premium facility in Clinton, Iowa, on Wednesday, September 9, 2015, at approximately 9:00 a.m. I checked in at the facility's security post where I met Mr. Marks, and he gave me a brief safety orientation. Mr. Marks then escorted me to an office where I also met Mr. Quentin Behounek, the lead operator of the facility's anhydrous ammonia refrigeration

systems. We sat down in the office and I explained that I was conducting the inspection under authority of the CAA's Chemical Accident Prevention Provisions, and that I would be reviewing the facility's RMP along with the required prevention program. I explained that I would need to conduct a walk-through of the covered process, taking photographs. I also stated that after completing the walk-through and reviewing all applicable documents, I would conduct an exit interview to explain my findings, provide a receipt for any requested document copies, and answer questions. I showed Mr. Marks my letter of authorization from EPA Region 7. I then filled out a Notice of Inspection Form (see Appendix A, Item 2), and I explained that my inspection was for enforcement purposes and that enforcement actions could result from the inspection. Mr. Marks signed the Notice of Inspection form. At that point, I began filling out the Region 7 multi-media screening checklist (see Appendix A, Item 3), directing questions to Mr. Marks.

After the introduction and completion of the multi-media screening checklist, I asked to see the facility RMP documentation, including the off-site consequence analysis, process safety information, process hazard analyses, operating procedures, training records, maintenance records, compliance audits, and emergency response procedures. As I reviewed available documents, I directed any questions I had to Mr. Marks, and I noted my findings on the Region 7 Checklist for Risk Management Plan Investigations or Audits at Program 3 Stationary Sources (see Appendix A, Item 4).

The inspection included a walk-through of the covered process. Photographs from the walk-through are in Appendix A, Item 5.

HAZARD ASSESSMENT

I asked to see the facility's hazard assessment and off-site consequence analysis documentation. Mr. Marks told me that the facility did not have such documentation. Because the facility did not have this documentation, I identified the following preliminary finding:

1. **The facility had not conducted a hazard assessment (40 CFR 68.12(d)(2)).**

I reviewed the facility's 2014 and 2015 Occupational Safety and Health Administration (OSHA) 300 logs and found no incidents related to anhydrous ammonia. I also asked for a copy of the facility's Tier II report; however, Mr. Marks told me the facility had not compiled a Tier II report.

PROCESS SAFETY INFORMATION

I examined the facility's process safety information and obtained a copy of the facility's safety data sheets (SDS) for anhydrous ammonia (see Appendix B, Item 1).

I reviewed documentation of the facility's maximum intended inventory for anhydrous ammonia, and was provided inventories for both the high- and low-side refrigeration systems (see Appendix B, Item 2). An anhydrous ammonia capacity of 32,253.3 lbs is listed for the high-side system, and a capacity of 5,778.84 lbs is listed for the low-side system. I asked Mr. Marks for

copies of invoices that would document initial delivery of anhydrous ammonia to the facility. Mr. Marks provided a copy of an invoice indicating delivery of 10,001 lbs of anhydrous ammonia on November 5, 2014, and another invoice indicating delivery of 30,476 lbs of ammonia on the same day—November 5, 2014 (see Appendix B, Item 3). I noted that the aggregate delivery amount of 40,477 lbs exceeded the aggregate of the reported capacities of the systems of 38,032.14 lbs.

I reviewed the facility's safety information, noting that most of this information derived from operating manuals compiled by the mechanical contractors that had installed the refrigeration systems (The Tippmann Group had installed the low-side system, and McNeil Industrial had installed the high-side system). I noted that the facility had established safe upper and lower parameters (such as temperature and pressure), and had evaluated consequences of deviation. The facility had documented materials of construction, piping, and instrument diagrams (P&IDs), and safety systems. Mr. Marks was unable to show me (1) documentation of electrical classification for the high-side system (he was able to show me electrical classification for the low-side system), (2) relief system design and design basis for either system, and (3) ventilation system design for the high-side system (he was able to show me ventilation information regarding the low-side system). Because the facility was unable to show me such documentation, I identified the following preliminary finding:

2. The facility had not compiled written information regarding electrical classification, relief system design, or ventilation system design (40 CFR 68.12(d)(1)(iii-v).

I asked how the facility had documented that equipment complies with recognized and accepted engineering practices. Mr. Marks told me that the facility adheres to industrial standards from the International Institute of Ammonia Refrigeration (IIAR), and he also showed me a list of design codes and standards that had been included in the documentation for the low-side system (see Appendix B, Item 4).

During my review of the facility's process safety information, Mr. Marks and Mr. Behounek told me that the two refrigeration systems—referred to by the facility as the "high-side" and "low-side" systems—are isolated systems having no interconnected piping. During my walk-through of the systems, I noted that each system had its own engine room (the engine rooms were separated by other production areas), but that the systems were both located within the same building complex.

PROCESS HAZARD ANALYSIS

Mr. Marks and Ms. Sheila Breja, Maintenance Clerk for Iowa Premium, showed me documentation that initial process hazard analyses (PHA) had occurred for both the high- and low-side systems in October/November 2014 at the time the systems were being brought online. The facility had conducted the PHAs with assistance from representatives of the mechanical contractors installing the systems. I obtained a copy of the facility's PHA documentation for the high-side system (see Appendix B, Item 5) and a copy of the facility's PHA documentation for the low-side system (see Appendix B, Item 6). For the high-side PHA, a what-if methodology had been applied, and for the low-side PHA, a checklist methodology had been applied. I noted

that the PHA documentation included the PHA team's findings, recommendations, persons responsible for actions to be taken, and a schedule for completing the actions. I asked Mr. Marks and Ms. Breja how the facility documents actions and resolution to the PHA findings. Ms. Breja explained that she maintains this information in spreadsheets and emails kept on her work computer. I chose several PHA findings and asked Ms. Breja to show me documentation of actions taken and resolutions. Ms. Breja was able to show me documentation that the findings I selected had been addressed.

OPERATING PROCEDURES

I reviewed the facility's operating procedures for the high- and low-side refrigeration systems. I found that the procedures addressed the various startup, normal, shutdown, and emergency operations specified in §68.69(a). I obtained copies of the facility's procedure for system charging of the high-side (see Appendix B, Item 7) and the facility's procedure for operation of evaporators on the low-side (see Appendix B, Item 8).

TRAINING

I reviewed the facility's training documentation and noted that the refrigeration contractors installing the systems had provided initial training to facility employees. Training topics included health and safety awareness, introduction to anhydrous ammonia refrigeration, and operations of evaporators, compressors, condensers, and valves. Mr. Behounek told me that later this year, the facility will send its operators to anhydrous ammonia refrigeration training in Garden City, Kansas.

MECHANICAL INTEGRITY

I reviewed the facility's mechanical integrity documentation and found that the facility had a document that outlined a mechanical integrity program (see Appendix B, Item 9). I noted that this document provided policy and guidance for establishing inspection schedules, roles and responsibilities, and required documentation, but did not contain specific preventative maintenance procedures for specific equipment of the covered process. I asked Mr. Marks if the facility had written procedures for maintaining process equipment, such as an inventory of relief valves on the covered process and their expiration dates, or procedures for maintaining anhydrous ammonia sensors. Mr. Marks was not able to show me such documentation. I ask Mr. Marks if the facility has a software system or other process that would generate preventative maintenance orders for equipment of the covered process. Mr. Marks told me that the facility does not have such a system, but that the refrigeration contractors would notify the facility of need for a preventative maintenance item. Based on this information, I identified the following preliminary finding:

3. **The facility had not prepared and implemented written procedures for maintaining process equipment (40 CFR 73(b)).**

During the walk-through of the high- and low-side refrigeration systems, I had asked Mr. Marks and Mr. Behounek to identify the "king valves" of each system (king valves can typically function as shut-off valves during emergencies). For the low-side system, Mr. Behounek identified a valve beneath an overhead platform (supporting a receiver vessel) as the king valve for the system. I took a photograph of the valve (see Appendix A, Item 5, Photograph 5) and noted that the valve was identified only by a piece of tape marked "VI-02" (no marking indicated the valve was a king valve or shutoff valve). Because the IIAR Bulletin No. 109 "Guidelines for IIAR Minimum Safety Criteria for a Safe Ammonia Refrigeration System" specifies that the main shut-off valve ("king valve") should be identified with a prominent sign having letters sufficiently large to be easily read, I identified the following preliminary finding during my post-inspection review:

4. **The facility had not followed the generally accepted and good engineering practice of prominently identifying the main shut-off valve ("king valve") of the facility's "low side" anhydrous ammonia refrigeration system (40CFR 68.73(e)).**

During the walk-though of the high-side system, Mr. Behounek pointed out the king valve for the system, and I saw that it had been marked with a sign indicating that it was the king valve.

MANAGEMENT OF CHANGE AND PRE-STARTUP SAFETY REVIEW

I reviewed the facility's written procedures for management of change (MOC) (see Appendix B, Item 10). Based on my review during the inspection, the procedure appeared to address the required elements. Mr. Behounek told me that since startup in November 2014, no change had required an MOC.

Ms. Breja showed me documentation of the facility's pre-startup safety reviews (PSSR) in November 2014 during initial startup of the facility (see Appendix B, Item 11). Based on my review during the inspection, the PSSR documentation appeared to address the elements required by §68.77(b)(1-4).

COMPLIANCE AUDITS

I asked Mr. Marks if the facility had conducted any compliance audits. He told me that the facility had not yet, but would conduct a compliance audit within the required 3-year timeframe (less than 1 year had passed since the facility re-opened and acquired a threshold quantity of anhydrous ammonia).

INCIDENT INVESTIGATION

I asked Mr. Marks whether any previous incidents had resulted in or posed potential for catastrophic releases. Mr. Marks said no such incidents had occurred since the facility opened in November 2014.

EMPLOYEE PARTICIPATION

The facility had a written plan to implement employee participation in the PHA, and applicable elements of process safety management (see Appendix B, Item 12).

HOT WORK PERMIT

I was shown a copy of a hot work permit for work near the covered processes, and obtained a copy (see Appendix B, Item 13). Based on my review during the inspection, the permit appeared to address the required elements. I also obtained a copy of a facility's "line-break" procedure (see Appendix B, Item 14).

CONTRACTORS

Mr. Marks showed me a pre-qualification form used by the facility to evaluate contractors, and I obtained a copy (see Appendix B, Item 15).

EMERGENCY RESPONSE

I asked Mr. Marks and Mr. Behounek how the facility would respond to an accidental release of anhydrous ammonia. They indicated that the facility would need assistance from emergency responders for large releases and said they would call 911 to notify responders. I asked Mr. Marks if the facility was included in a community emergency response plan, and he said that he was not sure. I asked Mr. Marks if the facility had coordinated response actions with the local fire department, and he said that the facility had not.

Prior to the inspection, I had spoken with Ms. Mindy Benson, Emergency Management Coordinator for Tama County, inquiring about Iowa Premium's coordination with local emergency planners and responders. She told me that she had received a draft Emergency Action Plan document from the facility, but that it was incomplete. Ms. Benson emailed me a copy of this document (see Appendix A, Item 6). I asked Ms. Benson if her office had received a Tier II report from the facility since opening in November 2014, and she said she had not received one.

Based on this information, I identified the following preliminary finding:

5. **The facility had not implemented an emergency response program or coordinated to have the facility included in the community emergency response plan (40 CFR 68.12(d)(4)).**

RISK MANAGEMENT PLAN SUBMISSION

Prior to the inspection, EPA provided me a copy of the facility's most recent RMP submission from 2004 (see Appendix A, Item 1). During the inspection, I asked Mr. Marks if the facility had submitted an RMP to EPA since opening in November 2014. Mr. Marks told me the facility had not submitted an RMP. Therefore, I identified the following preliminary finding:

6. **The facility had not submitted an RMP (40 CFR 68.12(a)).**

MANAGEMENT

Mr. Marks told me he was the person responsible for implementation of Iowa Premium's risk management program.

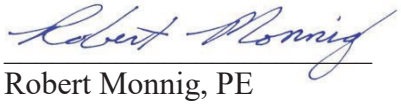
CLOSING CONFERENCE

At the conclusion of the inspection, I reviewed my observations and preliminary findings with Mr. Marks. I also explained that findings could be identified via post-inspection review of the documents obtained. I provided the Confidentiality Notice (see Appendix A, Item 7) and the completed Receipt for Samples and Documents form (see Appendix A, Item 8), which Mr. Marks reviewed. Mr. Marks reviewed the receipt for documents first, signed it, and completed the Confidentiality Notice, indicating that the document copies provided to me did not contain confidential business information. I then filled out the Notice of Preliminary Findings form (see Appendix A, Item 9), and provided it to Mr. Marks for review and signature.

Mr. Marks gave me his business card during the inspection (see Appendix A, Item 10).

I departed the facility at approximately 3:45 p.m. on September 9, 2015.

This report concludes my inspection activities regarding the Iowa Premium facility in Tama, Iowa.



Robert Monnig, PE
Compliance Inspector
October 19, 2015

Attachments

APPENDICES

Appendix A – Documents Provided by the Inspector

Item	Description
1	2004 RMP*Info Report, downloaded on 5/11/2015
2	Notice of Inspection Form
3	EPA Region 7 Multi-media Screening Checklist
4	Checklist for Risk Management Investigations, Programs 3 Stationary Sources, Region 7 U.S. Environmental Protection Agency
5	Inspection Photographic Log
6	Copy of Draft Emergency Action Program Submitted to Tama County by Facility
7	Confidentiality Notice
8	Receipt for Samples and Documents Form
9	Notice of Preliminary Findings
10	Business Card

Appendix B – Documents Provided by the Facility

Item	Description
1	Anhydrous Ammonia SDS
2	Maximum Intended Inventory
3	Anhydrous Ammonia Delivery Receipts
4	Design Codes and Standards
5	Process Hazard Analysis (High Side)
6	Process Hazard Analysis (Low Side)
7	SOP for System Charging (High Side)
8	SOP for Evaporator (Low Side)
9	Mechanical Integrity Program
10	Management of Change Procedure
11	Pre-Startup Safety Review
12	Employee Participation Plan
13	Hot Work Permit
14	Line Break Permit
15	Contractor Pre-Qualification Form

Appendix A, Item 5

Inspection Photographic Log

Iowa Premium
Tama, Iowa

CASE NO. 15IA0909	DESCRIPTION	This photograph shows recirculator vessels of the facility's "low-side" anhydrous ammonia refrigeration system.	1
	FACILITY	Iowa Premium – Low-Side Refrigeration System	Date
Direction: *Not recorded*	PHOTOGRAPHER	Robert Monnig	9/9/15

Iowa Premium
Tama, Iowa

CASE NO. 15IA0909	DESCRIPTION	This photograph shows compressors of the low-side system.	2
	FACILITY	Iowa Premium – Low-Side Refrigeration System	Date
Direction: *Not recorded*	PHOTOGRAPHER	Robert Monnig	9/9/15

CASE NO. 15IA0909	DESCRIPTION	This photograph shows typical labeling on piping.	3
	FACILITY	Iowa Premium – Low-Side Refrigeration System	Date
Direction: *Not recorded*	PHOTOGRAPHER	Robert Monnig	9/9/15

Iowa Premium
Tama, Iowa

CASE NO. 15IA0909	DESCRIPTION	This photograph shows an anhydrous ammonia sensor (box at center) in low-side engine room.	4
	FACILITY	Iowa Premium – Low-Side Refrigeration System	Date
Direction: *Not recorded*	PHOTOGRAPHER	Robert Monnig	9/9/15

CASE NO. 15IA0909	DESCRIPTION	This photograph shows the valve that Mr. Behounek indicated was the king valve for the low-side system (see valve with yellow tape). This valve was located on the underside of an elevated platform.	5
	FACILITY	Iowa Premium – Low-Side Refrigeration System	Date
Direction: Up	PHOTOGRAPHER	Robert Monnig	9/9/15

Iowa Premium
Tama, Iowa

CASE NO. 15IA0909	DESCRIPTION	This photograph shows the arrangement of the king valve beneath the overhead platform that supports the receiver vessel.	6
	FACILITY	Iowa Premium – Low-Side Refrigeration System	Date
Direction: North	PHOTOGRAPHER	Robert Monnig	9/9/15

Iowa Premium
Tama, Iowa

CASE NO. 15IA0909	DESCRIPTION	This photograph shows anhydrous ammonia piping and a relief vent (see vertical orange piping) on the facility's roof.	7
	FACILITY	Iowa Premium – High-Side Refrigeration System	Date
Direction: East	PHOTOGRAPHER	Robert Monnig	9/9/15

CASE NO. 15IA0909	DESCRIPTION	This photograph shows an anhydrous ammonia sensor in the engine room of the “high-side” anhydrous ammonia system.	8
	FACILITY	Iowa Premium – High-Side Refrigeration System	Date
Direction: East	PHOTOGRAPHER	Robert Monnig	9/9/15

Iowa Premium
Tama, Iowa

CASE NO. 15IA0909	DESCRIPTION	This photograph shows a recirculator vessel and compressors in the engineer room of the high-side system.	9
	FACILITY	Iowa Premium – High-Side Refrigeration System	Date
Direction: *Not recorded*	PHOTOGRAPHER	Robert Monnig	9/9/15

Iowa Premium
Tama, Iowa

CASE NO. 15IA0909	DESCRIPTION	This photograph shows the high-pressure receiver of the high-side system.	10
	FACILITY	Iowa Premium – High-Side Refrigeration System	Date
Direction: North	PHOTOGRAPHER	Robert Monnig	9/9/15

CASE NO. 15IA0909	DESCRIPTION	This photograph shows the data plate of the high-pressure receiver of the high-side system. The plate on the right is a repair "R" stamp plate indicating a repair date of August 4, 2014.	11
	FACILITY	Iowa Premium – High-Side Refrigeration System	Date
Direction: North	PHOTOGRAPHER	Robert Monnig	9/9/15